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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,770	04/27/2001	Tadayuki Suzuki	0425-0835P	2822

2292 7590 03/23/2004

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EXAMINER

CLARDY, S

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,770

Applicant(s)

SUZUKI ET AL.

Examiner

S. Mark Clardy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claims 8-37 are pending in this application in which a request for continued examination (RCE) has been filed.

Applicants' claims are drawn to a plant activating agent¹ (claims 8-13, 23-28), and method of applying the agent(s) to plants to assist the plant growth (claims 14-22, 29-37). Improved plant growth is determined by a 5% "improved reproduction of unicellular green cells"² (claim 8; the term is redundant), or any of five other criteria (claim 9): a "2 points" improved degree of chlorophyll value, a 10% increase in plant weight, a 5% improved degree of leaf area, a 5% increase in [leaf] blade ascorbic acid concentration, or a 10% decrease in [leaf] blade nitrate ion concentration. All of the methods of determining improved plant growth appear to be art accepted, conventional measures for assessing plant growth improvement; each method described in the specification makes use of readily available instruments used in conventional laboratory analysis of plant materials.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 10, 11, 13, 23, 25, 28, and those dependent thereon (i.e., 8-37) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The intended meanings of the following terms are unclear: "reproduction amount" (claims 8, 13, 23, 28), "(standard) improved reproduction degree" (claims 10, 13, 23, 25, 28),

¹Claim 1: fatty acids, organic acids, lipids, alcohols, amines, amino acids, proteins, nucleic acids, natural extracts, fermentation residues, vitamins

² $100(P_1 - P_0)/P_0$, in which P represents the reproduction amount of green cells.

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and “ppm in terms of an effective or active component per a culturing solution of green cells” (claim 11).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

Claims 8-10, 23-25 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. Regardless of the recited characteristics of the claimed “plant activating agents” in the claims, the listed agents are all well known compounds, biochemicals, and extracts which applicants did not invent. The claims as drafted read on these compounds and extracts, as well as compositions comprising them.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following: Yamashita (US 5,549,729), Sampson (US 4,436,547), or Sakagami et al (US 6,004,906).

Yamashita teaches the utility of a wide variety of compounds, including those recited in claim 8, as being useful in plant growth stimulating compositions; see columns 7-9 and the table in column 3: vitamins and cofactors (several listed), seaweed extract, yeast extract, citric acid, various other acids, sugar alcohols, nucleotides and bases.

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Sampson teaches the utility of various additives for use with plant growth regulators for improving the growth characteristics of cereal crops. Among the additives are organic acids, vitamins or cofactors, purine or pyrimidine nucleosides or nucleotides, fatty acids, naturally occurring fats and oils, and amino acids (col 2, lines 1-39).

Sakagami et al teach plant growth factors comprising peptides which are useful for promoting cell growth in plants (columns 1-2).

Thus it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have used any of the disclosed materials in Yamashita, Sampson, or Sakagami et al in compositions for enhancing plant growth. Again, determination of appropriate concentration ranges to achieve any given growth criteria would be within the skill level of the ordinary artisan. Further, it appears that applicants' threshold values are simply arbitrarily selected cut off points for plant growth, chlorophyll content, nitrate ion concentration, etc. It is well-established that merely selecting proportions and ranges is not patentable absent a showing of criticality. In re Becket, 33 U.S.P.Q. 33 (C.C.P.A. 1937). In re Russell, 439 F.2d 1228, 169 U.S.P.Q. 426 (C.C.P.A. 1971). It is immaterial whether any of the references disclose application to algae or other "unicellular green cells"; the materials claimed herein are the same as those recited in the prior art. Further, it is noted that the green plant cells herein are merely used in conventional assay processes for screening appropriate materials, and do not appear to be the final targets for the claimed methods.

While applicants have deleted several of the previously recited compounds from the Markush listings in the claims, it is noted that the remaining extensive lists of biochemicals still include compounds that will necessarily be present in the various biological extracts of the cited

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prior art. The teachings of the cited prior art are sufficient to teach compositions comprising biochemicals such as lipids, alcohols, amines, amino acids, proteins, nucleic acids, natural extracts, fermentation residues, and vitamins, whether the specific examples are cited or not.

Applicants' claims are all drawn to compositions and methods of assisting the growth of plants. It would appear, however, given the screening or assay methods disclosed herein, that it may be more appropriate for applicants' claims to be drawn to methods of determining or assaying the effectiveness of plant growth improving compositions.

No unobvious or unexpected results are noted; no claim is allowed.

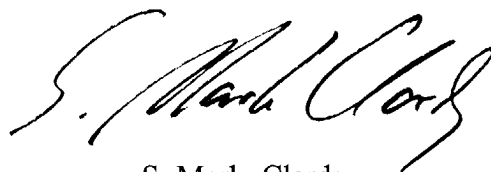
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "S. Mark Clardy". The signature is fluid and cursive, with the first name "S." and last name "Clardy" clearly distinguishable.

S. Mark Clardy
Primary Examiner
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March 22, 2004